

1 *PURPOSE AND NEED FOR ACTION*

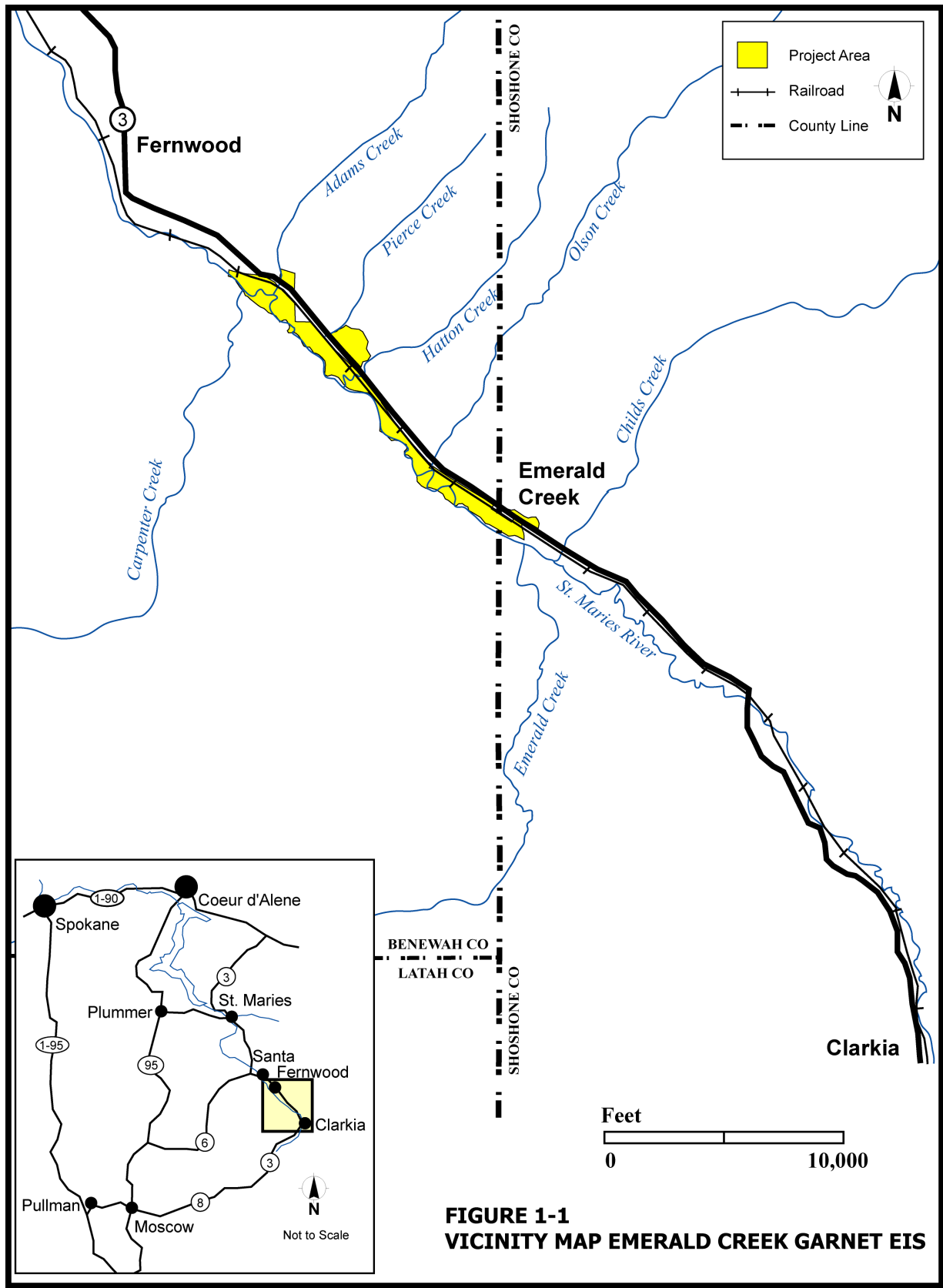
1.1 *Introduction*

Emerald Creek Garnet Ltd. (ECG) has mined garnet in 16 federal and state permit areas in the Carpenter Creek and Emerald Creek basins near Fernwood, Idaho since 1992, and continues to mine in these basins. ECG has also mined garnet in four state permit areas near the St. Maries River since 2001, and continues to mine there. Under the current production goal of 30,000 tons per year, ECG has four to seven years of mining remaining in these permit areas. After the next one to two years of mining, production would be scattered in the upper watersheds, and in narrow, confined valley bottoms. Annual production would subsequently decrease for the remaining reserves. Consequently, ECG is proposing to mine new areas along the St. Maries River, immediately below the Emerald Creek basin. The proposed action consists of a comprehensive mining, reclamation, and committed mitigation plan.

The proposed new mining area is in northern Idaho approximately 2 to 4 miles southeast of Fernwood, Idaho in Benewah and Shoshone Counties (Figure 1-1). It is adjacent to the St. Maries River between Emerald and Carpenter Creeks (between river miles 35 and 38). The confluence of the St. Maries River and the St. Joe River is approximately 35 miles downstream (north) of the proposed new mining area. The project area is found on the Fernwood, Idaho United States Geological Survey (USGS) 7.5" topographic quadrangle in Township 43 North, Range 1 East, Sections 5, 8, 9, 15, and 16.

The proposed new mining area encompasses 327.5 acres and contains 193,930 tons of garnet reserves in total. One hundred thirty-three (133) of those acres are wetlands and other waters of the United States (U.S.) subject to regulation under Section 404 of the Clean Water Act (CWA). The remaining 194.5 acres are upland. ECG proposes to discharge dredged and fill material into 133 acres of wetlands and other waters of the U.S. in association with the mining of garnet.

The National Environmental Policy Act (NEPA) requires that an Environmental Impact Statement (EIS) be prepared for major federal actions that could significantly affect the environment. For the proposed mining of garnet reserves within the St. Maries River floodplain to proceed, ECG must obtain a Department of the Army Permit under Section 404 of the CWA. The area proposed for garnet extraction contains wetlands that would be temporarily filled by construction of isolated berms, topsoil, overburden stockpiles, work pads and other discharges of dredged and fill material. The United States Army Corps of Engineers (USACE) has determined that the evaluation and issuance of a 404 permit would be considered a major federal action significantly affecting the quality of the human environment and therefore requires the preparation of an EIS. The purpose of this Draft EIS (DEIS) is to identify potential environmental impacts of the proposed action and evaluate reasonable and practical mining and reclamation alternatives that meet the purpose and need for the project. Information contained in this DEIS serves as the analytical basis for a decision on whether to issue, issue with modifications or conditions, or deny a CWA Section 404 permit for the proposed discharge of dredged and fill material associated with garnet mining in approximately 133 acres of wetlands and other waters of the U.S. (Ref. 33 Code of Federal Regulations [CFR], Part 325, Appendix B, paragraph 9. (b) (5) Alternatives).



1.2 Purpose and Need

ECG currently mines in five permit areas in Carpenter and Emerald Creek basins, and three permit areas near and along the St. Maries River. Current mining practices include 80 percent wet panel mining with 20 percent dry panel mining in confined areas. Under current production goals, ECG has four to seven years of mining remaining in these areas. After one to two years of peak production, remaining mining areas would be in upper watersheds with limited mining seasons. Production would subsequently decrease for the remaining reserves. Consequently, ECG is proposing to dredge mine new areas of alluvial deposits of industrial garnet found in and near the floodplain of the St. Maries River.

The purpose of this project is to mine industrial grade garnet. The need for the project is four-fold:

- 1) To increase total available reserves to meet worldwide market demand for garnet products;
- 2) To retain and increase customer base by showing the capability of market longevity;
- 3) To increase availability of specific reserve grades for two target markets, water jet cutting, and oil industries; and
- 4) To improve mining efficiency.

1.2.1 Total Available Reserves

ECG has approximately 156,000 tons of proven reserves remaining in the nine permit areas listed in Table 1-1. Four to seven years of mining remain at an annual production rate of 30,000 tons. Mining in most of these areas is limited to less than a full mining year due to down time from adverse mining weather and/or time requirements for stream channel reclamation. Without the additional reserves within the proposed mining areas, full-time mining will end in approximately one to two years, the number of permanent employees will be reduced, seasonal employees will be hired, some equipment will be sold, and mining will continue at a reduced rate until reserves are depleted.

Table 1-1. ECG Remaining Mining Years

<i>DMP</i>	<i>Remaining Acreage</i>	<i>Mining Years</i>
301	86.0	1 year over 2 winters
302	5.0	3 years - 8 month/year
305	25.0	2 years - 4 month/year
306	50.0	2 years - 12 month/year
307	10.0	1 year - 8 month/year
317	0.0	
318	27.4	2.5 years
320	5.9	4 months
322	41.1	2 years – 12 month/year
TOTAL	250.4	

DMP=Existing Idaho Department of Lands (IDL) Dredge Mining Permits
Source: ECG 2003

1.2.2 Market Longevity

ECG's customer base is similar to many other industries since their end users would like a long-term guarantee of garnet availability. ECG provides coarse and fine garnet to the water purification industry for use in municipal water filtration systems. Once designed and constructed, garnet is not a replaceable product in these systems. The municipalities need a long-term guarantee of garnet availability before designing and constructing these environmentally-needed purification facilities. ECG also provides fine and coarse garnet to the abrasive industry. This product has many applications, including aviation and shipyard abrasive blasting before refinishing airplanes and ships. Specific equipment, designed to withstand garnet's abrasive qualities is needed in the application and recovery processes. ECG has indicated that these industries would not invest in purification and blasting equipment unless ECG can guarantee a long-term supply of garnet. With the current projected mining life of four to seven years under existing permits, ECG would not be able to compete for new customers who require a long-term supply of garnet.

1.2.3 Grade Requirements for Target Markets

ECG has targeted two markets, the oil industry and the water jet cutting industry, where ECG garnet is superior to any other garnet and superior to any replacement product currently available. The oil industry requires coarse garnet, principally the #8, #8/12, and # 16 mesh sizes. The water jet cutting industry requires fine garnet, ranging from #60 to #150 mesh size.

Typically, fine garnet (#80 minus) has been provided by crushing coarse garnet, primarily because "natural fine" garnet has not been available in any mining areas. With growth and high demand from both of these markets, ECG needs the natural fine garnet found in the proposed permit areas so it can provide the most competent product to the water jet-cutting industry without limiting the supply of coarse garnet for the oil industry.

Garnet found in the proposed St. Maries River mining areas is primarily fine. Because it is a naturally fine product, it is the world's best garnet for the water jet-cutting industry. It is efficiently processed simply by sizing and washing. With St. Maries River garnet, the highly competent coarse garnet also would be available for the oil industry.

1.2.4 Mining Efficiency

Capacity Operation: ECG has a full production capacity of 30,000 tons per year. At capacity, mining, concentrating, and milling occur at the highest possible efficiency; below capacity, inefficiencies occur. With additional reserves, ECG would be able to operate at capacity, providing the most garnet products at the lowest cost of production.

Decreased Garnet Waste: Approximately 20 percent of the garnet is lost when coarse garnet is crushed to provide a fine garnet product. The waste is typically unrecoverable very fine garnet. This has traditionally required ECG to mine an extra 25 percent of its coarse garnet to provide a fine product. This increases costs of operation and causes additional acreage to be mined each year.

Use Of Natural Fines: The processing of garnet in the jig and mill plants captures and separates fine garnet up to a #80 mesh. The natural fines exceeding #80 historically have not been captured for production because they have been a small percentage of the overall raw product, and because

equipment to capture natural fines has not been available. Spiral separators or Waverly tables are equipment that will recover these natural fines. To date, they have not been purchased by ECG because sufficient natural fines have not been present in existing mining areas to pay for the investment. With the addition of St. Maries River garnet, natural fines would be recovered in sufficient quantities to warrant the use of this equipment.

Reclamation Timelines: ECG is currently reclaiming floodplains and rebuilding stream channels under existing, authorized state and federal permits. The permits authorize ECG to build new channels on ground that has just been recontoured but not seeded. ECG has found through experience that new channels are most successfully rebuilt on ground that has been recontoured and seeded for several years. This additional timeframe can impede coordination of mining and reclamation activities.

1.3 ECG Garnet and Its Use

ECG has stated that its garnet is one of the most competent and durable garnet products on the world market. Its high competence is based on a non-fractured mono-crystalline structure and on a chemical composition with few impurities. Currently, ECG produces garnet products for the following applications:

- In abrasive blasting, garnet is used as a replacement for silica, which has caused silicosis. Competitive products made from industrial slag pose pollution problems with the potential release of arsenic, chromium, lead, and other heavy metals. These are all hazardous wastes that are being replaced in the world market by non-hazardous garnet. As an abrasive, garnet can be recycled approximately six times compared to one time use with slag and silica products. The ability to recycle not only reduces end users' costs, but also reduces waste disposal by six times.
- In the oil industry, garnet has been very effective in the recovery and flow of old oil wells that have marginal viability. Garnet is also used to blast clean and maintain oil pipelines.
- In the water treatment industry, garnet is increasingly used in municipal water treatment systems. It outperforms competitive products in water filtration capability, and its high specific gravity and inertness reduce maintenance and replacement costs.
- In the water jet cutting industry, garnet has been an irreplaceable abrasive component. High-pressure water jet cutting with garnet is used to avoid heat generation during cutting. This is vital to industries such as nuclear power plant construction, aircraft construction, and high precision cutting and engraving.
- In the polishing-related industry, garnet products are used for sandpaper, polishing compounds, grinding compounds, grinding wheels, and turbine blades.

Although garnet is one of the most common minerals, very little high-quality industrial-grade garnet is found in commercially viable concentrations. Industrial-grade garnet is primarily produced in Australia, India, North America, China, and South Africa, in decreasing order of production. In the U.S., industrial-grade garnet is produced primarily in New York and Idaho. U.S. production of garnet is 20 percent of the world market, with ECG representing approximately 50 percent of

domestic production, or 10 percent of the world market. ECG is the only producer for all of the applications identified above.

Alluvial garnet is found in small quantities in many of the drainages in this region of northern Idaho (Figure 1-2). Concentrations sufficient for commercial mining have been found in Emerald and Carpenter Creek basins, and along the St. Maries River below the confluence with Emerald Creek. Garnet concentration and size vary markedly within the drainages. Concentration variation is tied to unique valley bottom conditions at the time of deposition, as well as to variable rates of deposition over time. Coarser garnet is found closer to the source rock. This means that the grade of garnet found in the basins ranges from coarse to fine in the following order: East Fork Emerald Creek, West Fork Emerald Creek, Carpenter Creek, and St. Maries River. Coarser garnet is also found in the upper portions of each watershed. Fine garnet is found in greatest quantity in the St. Maries River floodplain, and in the lower portions of each watershed. Overall, the 193,930 tons of reserves located in the 327.5 acres of proposed mining areas are the finest mineable-concentration grade in the region.

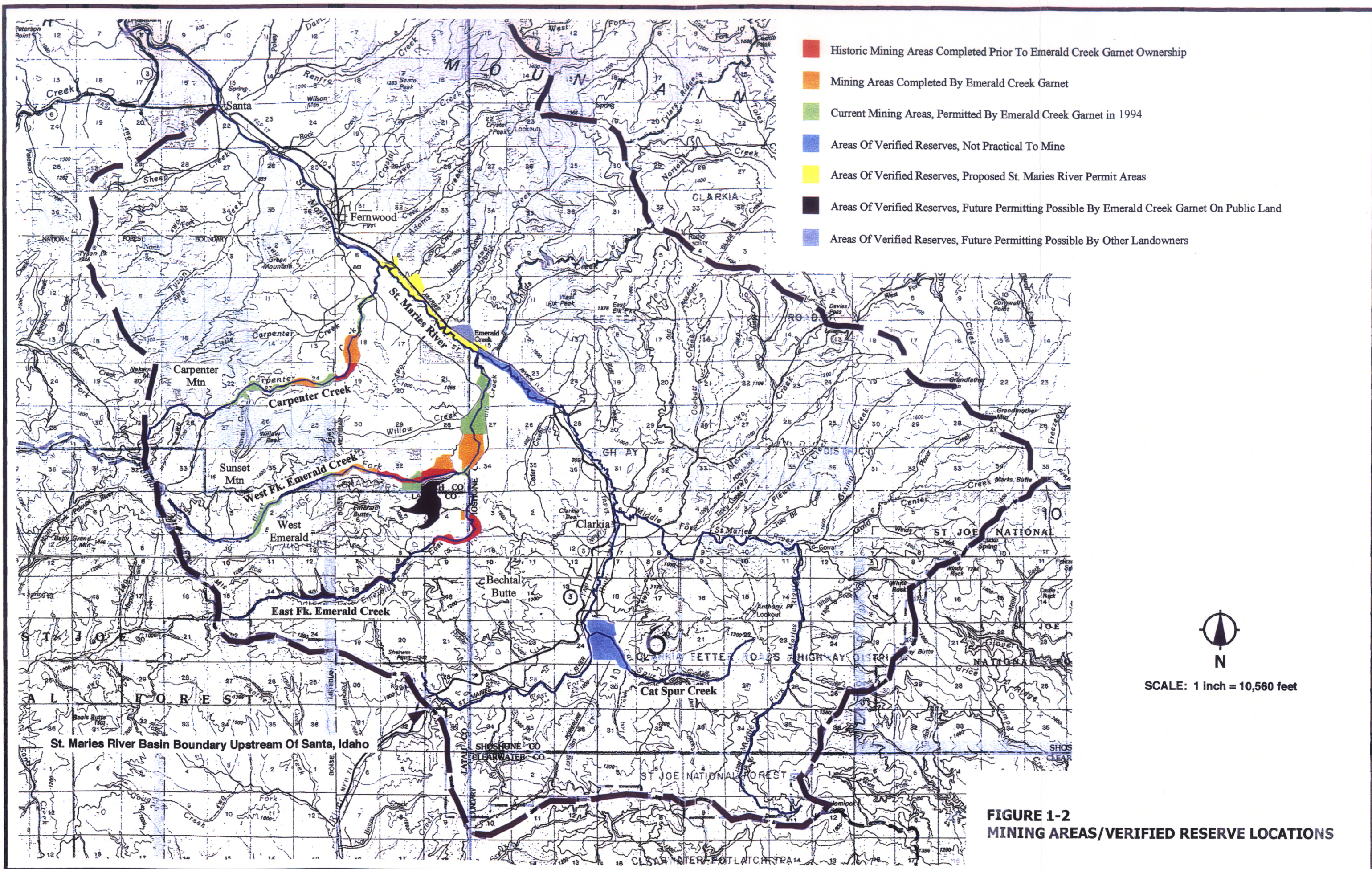
ECG has a customer base built on the availability of a full range of product size from coarse to fine. Table 1-2 lists the products ECG provides to various industries.

Table 1-2. ECG Current Products

<i>Mesh Size</i>	<i>Industrial Uses</i>
Coarse	
#8	fracking and packing sands for oil wells
#8/12	oil pipelines, pipe suppliers, water filtration
#16	oil fields, abrasive blasting
#36	abrasive blasting
Fine	
#30/40	abrasive blasting, water filtration, water jet cutting
#60	abrasive blasting, water filtration, water jet cutting
#80	abrasive blasting, water jet cutting
#100	water jet cutting, polishing
#150	polishing, water jet cutting

Source: ECG 1999

The customer base that ECG has developed over many years is based on demand for ECG's garnets' natural characteristics that are unique in the world for size, hardness, and competency. The best product is a natural, uncrushed product that has been sorted by mesh size for various industries. Crushed garnet is a viable product, but lacks the needed competency for some markets. Finer grade garnet was initially a by-product produced for customer convenience when there was a need for a mix of coarse and fine grades, for example, in water filtration. Industries that required coarser products for abrasives and pipelines have reduced demand in the last 10 years with the closure of military bases and the reduction in production of domestic oil wells.



- Historic Mining Areas Completed Prior To Emerald Creek Garnet Ownership
- Mining Areas Completed By Emerald Creek Garnet
- Current Mining Areas, Permitted By Emerald Creek Garnet in 1994
- Areas Of Verified Reserves, Not Practical To Mine
- Areas Of Verified Reserves, Proposed St. Maries River Permit Areas
- Areas Of Verified Reserves, Future Permitting Possible By Emerald Creek Garnet On Public Land
- Areas Of Verified Reserves, Future Permitting Possible By Other Landowners



SCALE: 1 inch = 10,560 feet

FIGURE 1-2
MINING AREAS/VERIFIED RESERVE LOCATIONS

ECG has responded to the loss of coarse product demand by developing a market for their fine products. By making specific products aimed at “higher tech” end-users, ECG has been able to replace some of the lost sales in a higher priced market. This “higher tech” market is primarily the water jet cutting and engraving industries. These industries require #60 to #150 mesh sizes in a washed product. The best product for these industries is natural, uncrushed garnet, which provides the best competency. Competitive products are available as crushed garnet. ECG is the only domestic supplier with the ability to produce a natural, competent, washed product. The reserves within the proposed St. Maries River permit areas provide the exact product demanded by these two industries.

Historically, ECG’s worldwide market share of coarse garnet (#40 plus mesh size) has averaged 65 percent with the fine garnet (#40 minus mesh size) at 35 percent. In the last three years, the coarse market has decreased to 50 percent and the fine market has increased to 50 percent. ECG’s long-term goal is to realize a 65 percent market share for fine garnet, and a 35 percent market share for coarse garnet. This goal would be attained by targeting two primary industries: the water jet cutting industry in the fine market, and the oil industry in the coarse market. The water jet cutting industry creates a high demand for fine-sized garnet. This is the most common garnet found in the proposed project area. To date, crushing of larger sizes of garnet has occurred to meet the water jet industry demand. This reduces limited, large product reserves too quickly, and restricts the ability to provide coarse garnet to the oil industry and other coarse product end-users.

1.4 Current Mining Operations

This section provides a summary of ECG’s current mining operations. Included are discussions of ECG’s current mining locations (authorized active permit areas), current reclamation activities, how much mining remains, what mining techniques and equipment are used, how the excavated garnet is milled into a finished product, and what products ECG currently distributes for world-wide use.

1.4.1 Authorized Permits

ECG currently mines in Emerald and Carpenter basins and in upland areas near the St. Maries River under the following permits:

- 404 Permit 940101520. Issued by USACE on November 11, 1994 for discharge of dredged and fill material associated with garnet mining in 257 acres of wetlands and other waters of the U.S. within 487.4 acres of property.
- 401 Water Quality Certification. Issued by Idaho Division of Environmental Quality (IDEQ) on July 12, 1994.
- Dredge Mining Permits (DMPs) issued by IDL. A separate permit was issued for each mining area (see Table 1-3).
- Water Appropriations Permit 9207230, authorizing ECG to withdraw 0.20 cubic feet per second (cfs) of water from the St. Maries River for a settling pond used for mining operations associated with the mill facility.

- Water Appropriations Permit 9207208, authorizing ECG to withdraw 0.23 cfs of water for mining and 0.10 cfs of water for irrigation from Emerald Creek.
- Water Appropriations Permit 9207209, authorizing ECG to withdraw 0.23 cfs of water for mining and 0.10 cfs of water for irrigation from Carpenter Creek.
- Stream Alteration Permit 92-S-141, issued by Idaho Department of Water Resources (IDWR) on December 22, 1994 for impacts to stream channels.

Table 1-3 outlines DMPs issued by IDL that ECG has mined.

Table 1-3. Dredge Mining Permits Authorized for ECG

<i>DMP</i>	<i>Size (acres)</i>	<i>Location</i>
Permits acquired at purchase		
10	20.0	Carpenter Creek
44	100.0	Carpenter Creek
46	40.0	Carpenter Creek
50	52.0	West Fork Emerald Creek
Permits obtained prior to 1994		
205	75.0	Emerald Creek
287	11.8	East Fork Emerald Creek
289	26.0	Emerald Creek
290	23.5	West Fork Emerald Creek
296	30.0	West Fork Emerald Creek
Permits obtained in 1994		
288	8.0	Confluence of east & west forks
301	245.0	Emerald Creek
302	35.0	Carpenter Creek
303	10.0	West Fork Emerald Creek
305	50.0	West Fork Emerald Creek
306	60.0	Carpenter Creek
307	72.0	Carpenter Creek
311	15.4	West Fork Emerald Creek
Permits obtained in 2001		
317	14.0	St. Maries River
318	27.4	St. Maries River
320	5.9	St. Maries River
Permits obtained in 2002		
322	41.1	St. Maries River

Source: ECG 2003

Note: All permits issued by IDL.

1.4.2 Historic ECG Employment and Revenues

Historically, ECG has employed approximately 60 individuals, making it the area's third largest employer, following Potlatch Corporation, and federal and state governments. About 75 percent of ECG's workers are full-time employees and the remaining 25 percent are seasonal workers. Table 1-4 provides a breakdown of ECG's average employee composition.

Table 1-4. Average Employee Composition

<i>Employee Category</i>	<i>Number of Employees</i>	<i>Location</i>
Field employees	18	Benewah/Shoshone Counties, Idaho
Mill employees	11	Benewah/Shoshone Counties, Idaho
Repair/maintenance shops	10	Benewah/Shoshone Counties, Idaho
Jig plants	6	Benewah/Shoshone Counties, Idaho
On-site admin/technical support	5	Benewah/Shoshone Counties, Idaho
Management, Sales, Accounting, Marketing Support	10	Coeur d'Alene, Idaho Seattle, Washington Toronto, Canada

Source: ECG 2003

In 2002, ECG paid close to \$1.3 million in salaries and had nearly \$4.9 million in product sales. In the last eight years, salaries paid have ranged from \$1.3 to \$1.8 million, and product sales have ranged from \$4.6 to \$6.8 million. Most employees of the company live in or near Fernwood, which is heavily dependent on ECG's garnet operation for its present and future livelihood. The additional reserves would help ECG to remain a significant local employer and ensure that salaries, and contributions to the local economy in terms of income, property taxes, and the purchase of goods and services continue. It is estimated that ECG generates approximately 59 secondary jobs in the two-county region (Benewah and Shoshone), in addition to its direct employment of approximately 50 jobs.

1.4.3 Active Permit Areas

Table 1-5 shows the permit areas ECG is currently mining. The table identifies permit area by DMP number and shows total acreage of the permit area, acreage mined, and acreage remaining to be mined. Remaining mining is being conducted on permit areas authorized in 1994, 2001, and 2002. Mining and reclamation have been completed on all older (pre-1994) permit areas.

Table 1-5. ECG Active Permit Areas

<i>DMP</i>	<i>Total Size</i>	<i>Mined Acreage</i>	<i>Remaining Acreage</i>	<i>Location</i>
301	245.0	159.0	86.0	Emerald Creek
302	35.0	30.0	5.0	Carpenter Creek
303	10.0	10.0	0.0	West Fork Emerald Creek
305	50.0	25.0	25.0	West Fork Emerald Creek
306	60.0	8.0	52.0	Carpenter Creek
307	72.0	62.0	10.0	Carpenter Creek
311	15.4	15.4	0.0	West Fork Emerald Creek
317	14.0	14.0	0.0	St. Maries River
318	27.4	0.0	27.4	St. Maries River
320	5.9	0.0	5.9	St. Maries River
322	41.1	0.0	41.1	St. Maries River
TOTAL	575.8	325.4	250.4	

Note: 404 Permit 9401051520 issued for DMP's 301, 302, 303, 305, 306, 307, 311.
Source: ECG 2003

1.4.4 Current Reclamation Activities

Reclamation designs and concepts are included in the existing 404 Permit issued by USACE on November 11, 1994. Reclamation activities are undertaken as soon as mining is completed. Reclamation starts with pushing overburden to approximate pre-mining floodplain elevations and size. Stockpiled topsoil is then spread to final grade. The regraded landscape is seeded with endemic seed mixes and fenced to protect from cattle grazing. Where necessary, stream channels are excavated after the floodplain has one season of groundcover growth. Stream channels are excavated to design specifications to allow overtopping on a two-year recurrence interval, providing wetland hydrologic support to the floodplain. Control structures and large woody debris (LWD) are placed in the channels, and the channels are monitored until stability standards have been satisfied. The new channels are then wetted by ramping flow over a 24-hour period. The old channel is electroshocked and fish are transferred to the new channel. This type of reclamation activity typically takes two to three years to complete. The reclaimed landscape is then monitored until performance standards have been satisfied. Annual reclamation monitoring reports are prepared and submitted to USACE and the IDL for review and concurrence.

Table 1-6 identifies the extent of reclamation on each DMP that has been mined. Note that reclaimed acreage is within 10 percent of the mined acreage in the active permit areas. The proposed reclamation activities are the same type of activities that ECG has developed and

improved since 1992. These activities received reclamation awards in 1995, 1996, and 1998. The awards were cooperatively presented by the U.S. Forest Service (USFS), Bureau of Land Management, IDL, IDWR, Idaho Department of Fish and Game (IDFG), and IDEQ.

Volume II, Appendix L describes ECG's successful past reclamation efforts in four mining areas and provides photographs of the reclamation process.

Table 1-6. ECG Reclaimed Landscape Through May 2003

<i>DMP</i>	<i>Mined Acreage</i>	<i>Reclaimed Acreage</i>
44	50.0	70.0
46	15.0	15.0
50	0.0	15.0
205	75.0	75.0
287	11.8	11.8
288	8.0	8.0
289	26.0	26.0
290	23.5	23.5
296	30.0	30.0
301	159.0	145.0
302	30.0	22.0
303	10.0	10.0
305	25.0	15.0
306	8.0	3.0
307	62.0	31.0
311	15.4	15.4
317	14.0	14.0
TOTAL	562.7	564.7

Source: ECG 2003

1.5 Need for Environmental Impact Statement

1.5.1 Regulations and Environmental Impact Statement Process

The alluvial garnet deposits located on the 327.5-acre site along the St. Maries River contain 133.0 acres of jurisdictional wetlands and waters that would be temporarily impacted by mining activities and other discharges of dredged and fill material. NEPA requires that an EIS be prepared for major federal actions or decisions that would significantly affect the quality of the human environment.

For ECG to proceed with its proposed mining of garnet reserves within the St. Maries River floodplain and resultant temporary impacts on wetlands, it will be necessary for ECG to obtain a Department of the Army permit under Section 404 of the CWA. The site contains wetlands that would be temporarily filled by construction of sedimentation berms, topsoil, overburden stockpiles, work pads, and other discharges of dredged and fill material. Because of this, USACE has determined that the issuance of a 404 permit to the Applicant would be considered a major federal action and, therefore, requires the preparation of an EIS.

NEPA requires that an EIS “rigorously explore and objectively evaluate all reasonable alternatives to the proposed action” and that it devote “substantial treatment to each alternative considered in detail” (40 CFR Section 1502.14). For the alternatives “which were eliminated from detailed study,” the EIS must “briefly discuss the reasons for their having been eliminated.”

The Council on Environmental Quality (CEQ) NEPA regulations, the USACE Procedures for Implementing NEPA (33 CFR Parts 230 and 325), and the United States Environmental Protection Agency (USEPA) 40 CFR 404 (b)(1) guidelines provide direction regarding the test of reasonableness for alternatives. The regulations state the “reasonable alternatives” are those that are feasible and such feasibility must focus on the accomplishment of the underlying purpose and need that would be satisfied by the proposed federal action (33 CFR Part 325 App B.9.b[5]). CEQ has stated that reasonable alternatives are “those that are practical or feasible from the technical and economic standpoint and using common sense” (45 Fed Reg.18026, 18027, [1981]). The purpose of the alternative’s analysis under NEPA is to insure that the decision maker is fully informed about the environmental impacts of the proposed action in comparison to those of any reasonable alternatives.

The regulations further state that the NEPA alternatives analysis “should be thorough enough to use for both the public interest review and 404(b)(1) guidelines where applicable” (33 CFR Part 325, App.B.9.b(5)(a)). The proposed action is the issuance of a 404 permit that will enable ECG to mine garnet reserves, which will in turn allow ECG to continue to operate as a viable mining company for the next nine to 15 years. Therefore, the public interest review 404(b)(1) guidelines are applicable. To be “thorough enough” for §404(b)(1) guideline purposes, the alternatives analysis must determine “if there is a practicable alternative which would have less adverse impacts on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences” (40 CFR Section 230.10[a]). The guidelines define “practicable” as “available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes” (40 CFR Section 230.10 [a][2]).

ECG has prepared a Plan of Operations (ECG 2002) that is incorporated herein by reference, and its information is reflected throughout the analysis of alternatives in the DEIS. Copies of the Plan of Operations are available for inspection and review at USACE offices in Walla Walla, Washington and Coeur d’Alene, Idaho; and at USEPA, U.S. Fish and Wildlife Service (USFWS), and IDL offices in Boise, Idaho.

This DEIS has been prepared in accordance with federal regulations, including NEPA, the CEQ’s Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), USACE Procedures for Implementing NEPA (33 CFR Parts 230 and 325), and the USEPA “Guidelines for Specification of Disposal Sites for Dredged or Fill Material” (40 CFR 230).

A public scoping meeting was held November 5, 1998 in Coeur d'Alene, Idaho. An informal open house was also held the same day in Fernwood, Idaho at ECG headquarters. Chapter 5, Consultation and Coordination, summarizes the public and agency scoping process and relevant issues and comments that were considered in the preparation of this DEIS.

In addition to the public scoping meeting, numerous agency coordination meetings, on-site field visits and reviews, and telephone conference calls and email consultations were held to discuss the project and the Plan of Operations, and to review alternatives and reclamation and mitigation options.

A public hearing will be held by USACE on the 404 Permit Application and DEIS during a 45-day comment period following announcement of DEIS availability in the *Federal Register*, and distribution of the DEIS to agencies and interested organizations and individuals. Written comments received at the close of the comment period and comments received at the public hearing will be addressed in the Final EIS.

Following publication of a Notice of Availability in the *Federal Register* and distribution of the Final EIS, there will be a 30-day no-action period. After that time, USACE will issue a Record of Decision (ROD) summarizing its findings regarding the proposed action and its determination in compliance with Section 404, as well as other environmental regulations.

1.5.2 Summary of Scoping and Relevant Issues

Table 1-7 provides a summary of potential issues associated with ECG's proposal to dredge mine new areas of alluvial deposits of industrial garnet in and near the floodplain of the St. Maries River. These issues include those identified during public and agency scoping, other agency coordination meetings, communication and site visits, and by the technical principal investigators who prepared this DEIS. Most, but not all, of the issues are relevant and drive the focus of evaluations in Chapter 3, Affected Environment and Environmental Consequences.

1.5.3 Applicable Permits and Authorizations

The environmental planning, consultation, and impact assessment processes have been integrated to comply with all applicable federal, state, and local regulations. Table 1-8 outlines the major authorizing agencies and permits required for the project.

**Table 1-7. Potential Issues Associated with Proposed Mining
(Page 1 of 2)**

<i>Resource</i>	<i>Potential Issues</i>
Wetlands	<ul style="list-style-type: none"> • direct impact to wetlands and waters of the U.S. • locational alternatives to mining wetlands • potential indirect effects to stream channels • reclamation and mitigation • avoidance of oxbows • wetland functions and value assessment
Vegetation (Non-Wetlands)	<ul style="list-style-type: none"> • potential for effect on rare, threatened, and endangered species habitat-compliance with Endangered Species Act (ESA) -- need for Biological Assessment (BA) • effects of removal of large trees-shade to river and wetlands-perching roosting nesting by raptors and other birds
Wildlife	<ul style="list-style-type: none"> • potential habitat loss or alteration • potential presence and effect on rare, threatened, and endangered species-compliance with ESA, Migratory Bird Treaty Act -- need for BA • potential effects on non-game species
Fisheries	<ul style="list-style-type: none"> • potential impacts and current condition of fish habitat and presence or absence of fish species
Water Resources/Water Quality	<ul style="list-style-type: none"> • avoid direct and indirect impacts to stream channels • avoid direct point source discharges to stream channels and wetland areas • erosion, sediment and storm water Best Management Practices (BMPs). • describe potential water quality impacts -- surface water and localized ground water • include provision of adequate buffers between work sites and the St. Maries River to adequately protect water quality • maintain the integrity of the stream banks • hydrologic analysis to evaluate potential impacts on floodplain storage, stream channel morphology, wetland hydrology and ground water hydrology • comply with applicable water quality standards -- determine need for National Pollutant Discharge Elimination System (NPDES) permit • water withdrawals and releases • accidental releases

**Table 1-7. Potential Issues Associated with Proposed Mining
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<i>Resource</i>	<i>Potential Issues</i>
Earth Resources	<ul style="list-style-type: none">• soil characteristics and garnet reserves• sediment, erosion,
Land Use/Ownership	<ul style="list-style-type: none">• ECG and other private ownership-lease agreements• evaluation of conservation easements
Traffic and Transportation	<ul style="list-style-type: none">• number of haul trips and temporary access roads• increased truck traffic-Highway 3-safety, ingress, egress
Cultural Resources	<ul style="list-style-type: none">• presence/absence of cultural resources• Native American consultation
Socioeconomics	<ul style="list-style-type: none">• regional economy and ECG employment and revenues• evaluation of no action-no wetland mining on socioeconomics• evaluation of no action-no wetland mining on ECG
Visual	<ul style="list-style-type: none">• temporary effects on landscape during active mining• reclamation
Noise/Air Quality	<ul style="list-style-type: none">• equipment noise• vehicle emissions, fugitive dust and controls
Hazardous Materials	<ul style="list-style-type: none">• use of fuels, oils, lubricants, accidental release and regulatory compliance

Table 1-8. Permits and Authorizing Agencies for the Emerald Creek Garnet Mining Project

<i>Name of Permit</i>	<i>Authorizing Agency</i>
FEDERAL Department of the Army Permit under Section 404 of the Clean Water Act	USACE, Walla Walla District
National Historic Preservation Act Section 106 Compliance	USACE, Walla Walla District and Idaho State Historic Preservation Office
NPDES Permit - Storm Water General Permits	USEPA and IDEQ
STATE OF IDAHO Section 401 Water Quality Certification (CWA)	IDEQ
Dredge Mining Permit	IDL
Amendment to Water Appropriations Permit 92- 07230 for Withdrawal of Water from St. Maries River	IDWR